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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/957,428	09/19/2001	Richard H. Lawrence	42390P11724	3255

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EXAMINER

CHANG, ERIC

ART UNIT

PAPER NUMBER

2116

DATE MAILED: 08/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/957,428

Applicant(s)

LAWRENCE, RICHARD H.

Examiner

Eric Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-22 are pending.

Specification

2. The disclosure is objected to because of the following informalities: Application Serial Numbers are missing for the references cited on page 6, lines 5-7 of the Specification.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. Claims 10-16 and 18-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claims 10-16 recite the limitation "the article" in line 1 of the claims. There is insufficient antecedent basis for this limitation in the claim, because claim 8, on which they depend, refers only to a system. Because it appears that claims 10-16 are dependent on the article claimed in claim 9, they have been treated as such for the purposes of examination.

Appropriate correction is required.

5. Claims 18-22 recite the limitation "the method" in line 1 of the claims. There is insufficient antecedent basis for this limitation in the claim, because claim 8, on which they depend, refers only to an article. Because it appears that claims 18-22 are dependent on the

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method claimed in claim 17, they have been treated as such for the purposes of examination.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-16 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S. Patent 5,278,796 to Tillinghast et al.

8. As to claim 1, Tillinghast discloses a system comprising: a dynamic memory having an adjustable refresh frequency [col. 1, lines 8-12]; and at least one temperature sensor, coupled to the dynamic memory, to sense the dynamic memory's temperature [col. 2, lines 18-22], the processor to adjust the refresh frequency of the dynamic memory based at least in part to the dynamic memory's sensed temperature [col. 2, lines 11-14].

9. As to claim 2, Tillinghast discloses the dynamic memory comprises a dynamic random access memory [col. 1, lines 8-12], and that the system may be used to refresh any type of component that requires refreshing [col. 5, lines 29-31]. Because, as Applicant admits in the Description of the Related Art section of the Specification, it is well known in the art that low-

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power synchronous dynamic random access memory is a dynamic random access memory that requires refreshing [page 3, lines 1-6], Tillinghast teaches the dynamic memory comprises a dynamic random access memory, substantially as claimed.

10. As to claims 3-4, Tillinghast discloses the refresh operation is used to recharge the memory's capacitor charge [col. 1, lines 40-45]. Because, as Applicant admits in the Description of the Related Art section of the Specification, it is well known in the art that typical refresh operations comprise self-refresh [page 3, lines 1-3] and distributed refresh operations [page 2, lines 19-21] in order to recharge the memory's capacitor charge [page 2, lines 13-19], Tillinghast teaches the adjustable refresh frequency comprises a self-refresh frequency or a distributed refresh frequency, substantially as claimed.

11. As to claims 5-7, Tillinghast discloses the temperature sensor is located in proximity to the dynamic memory [col. 2, lines 18-22]. Because a temperature sensor integrated with the dynamic memory, attached to a ceramic package of the dynamic memory, or located within several centimeters of the dynamic memory is located in proximity to the dynamic memory, Tillinghast teaches all of the limitations of the claim.

12. As to claim 8, Tillinghast discloses the system comprises at least one of a personal digital assistant, a cellular phone, an Internet tablet, a personal computer [col. 2, lines 3-7].

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13. As to claim 9, Tillinghast discloses a system comprising: a dynamic memory having an adjustable refresh frequency [col. 1, lines 8-12]; and at least one temperature sensor, coupled to the dynamic memory, to sense the dynamic memory's temperature [col. 2, lines 18-22], the processor to adjust the refresh frequency of the dynamic memory based at least in part to the dynamic memory's sensed temperature [col. 2, lines 11-14]. Because Tillinghast teaches the system, Tillinghast teaches an article comprising a storage medium having stored thereon instructions, that, when executed by a computing platform, result in adjusting a frequency of a refresh operation of a dynamic memory of the computing platform by said system.

14. As to claim 10, Tillinghast discloses the dynamic memory comprises a dynamic random access memory [col. 1, lines 8-12], and that the system may be used to refresh any type of component that requires refreshing [col. 5, lines 29-31]. Because, as Applicant admits in the Description of the Related Art section of the Specification, it is well known in the art that low-power synchronous dynamic random access memory is a dynamic random access memory that requires refreshing [page 3, lines 1-6], Tillinghast teaches the dynamic memory comprises a dynamic random access memory, substantially as claimed.

15. As to claims 11-13, Tillinghast discloses the temperature sensor is located in proximity to the dynamic memory [col. 2, lines 18-22]. Because a temperature sensor integrated with the dynamic memory, attached to a ceramic package of the dynamic memory, or located within several centimeters of the dynamic memory is located in proximity to the dynamic memory, Tillinghast teaches all of the limitations of the claim.

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16. As to claim 14, Tillinghast discloses the system comprises at least one of a personal digital assistant, a cellular phone, an Internet tablet, a personal computer [col. 2, lines 3-7].

17. As to claims 15-16, Tillinghast discloses the refresh operation is used to recharge the memory's capacitor charge [col. 1, lines 40-45]. Because, as Applicant admits in the Description of the Related Art section of the Specification, it is well known in the art that typical refresh operations comprise self-refresh [page 3, lines 1-3] and distributed refresh operations [page 2, lines 19-21] in order to recharge the memory's capacitor charge [page 2, lines 13-19], Tillinghast teaches the adjustable refresh frequency comprises a self-refresh frequency or a distributed refresh frequency, substantially as claimed.

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. Claims 17-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,278,796 to Tillinghast et al., in view of U.S. Patent 5,875,142 to Chevallier.

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20. As to claim 17, Tillinghast discloses a system comprising: a dynamic memory having an adjustable refresh frequency [col. 1, lines 8-12]; and at least one temperature sensor, coupled to the dynamic memory, to sense the dynamic memory's temperature [col. 2, lines 18-22], the processor to adjust the refresh frequency of the dynamic memory based at least in part to the dynamic memory's sensed temperature [col. 2, lines 11-14]. Because Tillinghast teaches the system, Tillinghast teaches method for adjusting a frequency of a refresh operation of a dynamic memory of the computing platform by said system.

Tillinghast teaches all of the limitations of the claim, but does not teach that a command is issued to adjust said refresh frequency.

Chevallier teaches that a monitoring controller 162 may be used to adjust the operating frequency of the memory [col. 6, lines 26-27], based on the detected temperature of a memory [col. 1, lines 38-44]. Thus, Chevallier teaches means for adjusting the frequency of a memory based on a detected temperature similar to that of Tillinghast. Chevallier further teaches a controller that can issue commands to the memory to adjust said frequency.

At the time that the invention was made, it would have been obvious to a person of ordinary skill in the art to employ the controller command means as taught by Chevallier. One of ordinary skill in the art would have been motivated to do so that different operating parameters of the memory may be adjusted [col. 1, lines 38-44], in addition to the refresh frequency as taught by Tillinghast.

It would have been obvious to one of ordinary skill in the art to combine the teachings of the cited references because they are both directed to the problem of adjusting the frequency of a memory based on a detected temperature. Moreover, the controller command means taught by

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Chevallier would improve the flexibility of Tillinghast because it allowed the use of a look-up table to determine the detected temperature in order to allow calibration of the temperature sensor [col. 3, lines 66-67, and col. 4, lines 1-39].

21. As to claim 18, Chevallier discloses issuing a command comprises setting a value in a register of the memory [col. 3, lines 43-52]. It would be obvious to one of ordinary skill in the art that any suitable register may be used to store said value, such as an extended mode register, substantially as claimed.

22. As to claim 19, Tillinghast discloses the dynamic memory comprises a dynamic random access memory [col. 1, lines 8-12], and that the system may be used to refresh any type of component that requires refreshing [col. 5, lines 29-31]. Because, as Applicant admits in the Description of the Related Art section of the Specification, it is well known in the art that low-power synchronous dynamic random access memory is a dynamic random access memory that requires refreshing [page 3, lines 1-6], Tillinghast teaches the dynamic memory comprises a dynamic random access memory, substantially as claimed.

23. As to claim 20, Tillinghast discloses the temperature sensor is located in proximity to the dynamic memory [col. 2, lines 18-22]. Because a temperature sensor integrated with the dynamic memory, attached to a ceramic package of the dynamic memory, or located within zero to seven centimeters of the dynamic memory is located in proximity to the dynamic memory, Tillinghast teaches all of the limitations of the claim.

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Conclusion

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Chang whose telephone number is (703) 305-4612. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on (703) 308-1159. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ec
July 21, 2004



**REHANA PERVEEN
PRIMARY EXAMINER**